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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/613,166	07/03/2003	Adam K. Kolawa	50283/P396	9159
23363 7590 02/06/2008 CHRISTIE, PARKER & HALE, LLP PO BOX 7068 PASADENA, CA 91109-7068			EXAMINER TECKLU, ISAAC TUKU	
			ART UNIT 2192	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/613,166

Applicant(s)

KOLAWA ET AL.

Examiner

Isaac T. Tecklu

Art Unit

2192

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 November 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-31 and 43-48 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-31 and 43-48 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. This action is responsive to the Request for Continued Examination 11/19/2007.
2. Claim 27 has been amended.
3. Claims 32-42 have been cancelled.
4. Claims 1-31 and 43-48 have been examined.

#### ***Continued Examination Under 37 CFR 1.114***

5. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/19/2007 has been entered.

#### ***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed

under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1-5, 7-18, 20-30 and 43-48 are rejected under 35 U.S.C. 102(e) as being anticipated by Jorapur (US 7,299,382 B2).

Per claim 1

Jorapur discloses a method for automatically preventing errors in computer software having a plurality of different life cycle phases, the method comprising:

storing source code of the computer software in a code repository (e.g. FIG. 4, step 401 and FIG. 5, 501 and related text).

executing a plurality of software verification tools to verify the computer software (col. 4:55-65 "... each test may be generated in one or more blocks corresponding to one or more parts of the application to be tested ..." and col. 6: 52-60 "... tests 302 generated may include test code that may be inserted ..." and col. 9: 45-55 "... test may be executed to assess the operation and function of the application to be tested ..." and e.g. FIG. 4, step 408 and related text), wherein each of the plurality of software verification tools corresponds to a respective lifecycle phase of the computer software and automatically generates one or more test cases from the source code of the computer software (col. 11:30-35 "... produce multiple test cases ...");

generating verification results for each respective lifecycle phase of the computer software, responsive to executing the plurality of software verification tools and the automatically generated test cases (col. 14:20-25 "... results may be gathered after generation ..." and col. 11:30-35 "... produce multiple test cases ..." ) and;

processing the verification results for generating a representation of functional behavior the computer software (col. 3:10-25 "... results may reflect some behavior of the application

during execution ... results may reflect operations during deployment and un deployment of the application to be tested ...”); and

Per claim 2

Jorapur discloses:

The method of claim 1 further comprising providing a common configuration file for the plurality of verification tools (e.g. FIG. 3, Configurations 303 and related text).

Per claim 3

Jorapur discloses:

The method of claim 2, further comprising customizing a verification scope of one or more of the verification tools by modifying the common configuration file responsive to an objective criterion of quality of the computer software (col. 11:40-50 “... different attributes may be specified in a configuration file ...” and col. 10:1-15 “... configurations may be changed ...”).

Per claim 4

Jorapur discloses:

The method of claim 2 further comprising modifying a portion of the common configuration file specific to one of the plurality of verification tools responsive to the objective criterion of quality of the computer software (col. 10:1-15 “... configurations may be changed ...” and e.g. FIG. 4, step 407 and related text).

Per claim 5

Jorapur discloses:

The method of claim 2 further comprising modifying a portion of the common configuration file specific to one of a plurality of software developers responsive to the objective criterion of quality of the computer software (col. 10:1-15 "... configurations may be changed ...").

Per claim 7

Jorapur discloses:

The method of claim 1, wherein each portion of the computer software being developed by a software developer of a plurality of software developers, and the verification results include a plurality of objective criteria each of the plurality of objective criteria corresponding to quality of a respective portion of the computer software developed by each software developer of the plurality of software developers (col. 3:10-25 "... results may reflect some behavior of the application during execution ... results may reflect operations during deployment and un deployment of the application to be tested ...").

Per claim 8

Jorapur discloses:

The method of claim 7 further comprising providing a common configuration file for the plurality of verification tools; and modifying the common configuration file responsive to one or more objective criteria corresponding to quality of a respective portion of the computer software developed by each software developer (col. 10:1-15 "... configurations may be changed ...").

Per claim 9

Jorapur discloses:

The method of claim 7 further comprising verifying a first portion of the computer software developed by a first developer of the plurality of software developers using the

plurality of verification tools, before the computer software is stored in the code repository (col. 14:20-25 "... results may be gathered after generation ..." and col. 11:30-35 "... produce multiple test cases ...").

Per claim 10

Jorapur discloses:

The method of claim 9 further comprising allowing storing the first portion of the computer software in the code repository only if result of verification of the first portion meets a set standard (col. 14:20-25 "... results may be gathered after generation ..." and col. 11:30-35 "... produce multiple test cases ...").

Per claim 11

Jorapur discloses:

The method of claim 10 further comprising modifying the set standard responsive to the objective criterion of quality of the computer software (col. 10:1-15 "... configurations may be changed ...").

Per claim 12

Jorapur discloses:

The method of claim 10, wherein the set standard is common to each of the plurality of software developers (col. 14:20-25 "... results may be gathered after generation ..." and col. 11:30-35 "... produce multiple test cases ...").

Per claim 13

Jorapur discloses:

The method of claim 10, wherein the set standard is unique to at least one of the plurality of software developers (col. 14:20-25 "... results may be gathered after generation ..." and col. 11:30-35 "... produce multiple test cases ...").

Per claim 14

This is the system version of the claimed method discussed above (Claim 1), wherein all claim limitations have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also anticipated by Jorapur.

Per claim 15

This is the system version of the claimed method discussed above (Claim 2), wherein all claim limitations have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also anticipated by Jorapur.

Per claim 16

This is the system version of the claimed method discussed above (Claim 3), wherein all claim limitations have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also anticipated by Jorapur.

Per claim 17

This is the system version of the claimed method discussed above (Claim 4), wherein all claim limitations have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also anticipated by Jorapur.

Per claim 18

This is the system version of the claimed method discussed above (Claim 5), wherein all claim limitations have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also anticipated by Jorapur.

Per claim 20

This is the system version of the claimed method discussed above (Claim 7), wherein all claim limitations have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also anticipated by Jorapur.



Per claim 21

This is the system version of the claimed method discussed above (Claim 8), wherein all claim limitations have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also anticipated by Jorapur.

Per claim 22

This is the system version of the claimed method discussed above (Claim 9), wherein all claim limitations have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also anticipated by Jorapur.

Per claim 23

This is the system version of the claimed method discussed above (Claim 10), wherein all claim limitations have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also anticipated by Jorapur.

Per claim 24

This is the system version of the claimed method discussed above (Claim 11), wherein all claim limitations have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also anticipated by Jorapur.

Per claim 26

This is the system version of the claimed method discussed above (Claim 13), wherein all claim limitations have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also anticipated by Jorapur.

Per claim 27 (Currently Amended)

This is another method version of the claimed method discussed above (Claim 1), wherein all claim limitations have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also anticipated by Jorapur.

Per claim 28

This is another method version of the claimed method discussed above (Claim 3), wherein all claim limitations have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also anticipated by Jorapur.

Per claim 29

This is another method version of the claimed method discussed above (Claim 4), wherein all claim limitations have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also anticipated by Jorapur.

Per claim 30

This is another method version of the claimed method discussed above (Claim 5), wherein all claim limitations have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also anticipated by Jorapur.

Per claim 43

Jorapur discloses:

The method of claim 28 further comprising customizing the verification scope of one or more of the plurality of verification tools for a second time, if the known error is not detected by executing the plurality of software verification tools (col. 4:55-65 "... each test may be generated in one or more blocks corresponding to one or more parts of the application to be tested ..." and col. 6: 52-60 "... tests 302 generated may include test code that may be inserted ..." and col. 9: 45-55 "... test may be executed to assess the operation and function of the application to be tested ..." and e.g. FIG. 4, step 408 and related text).

Per claim 44

Jorapur discloses:

The method of claim 27 further comprising executing the plurality of software verification tools periodically to prevent the known error from re-occurring when the computer software is modified (e.g. FIG. 4 and related text).

Per claim 45

Jorapur discloses:

A system for automatically preventing errors in computer software having a plurality of different life cycle phases comprising:

means for providing a known error in the computer software, the known error belonging to a class of errors (col. 14:20-25 "... results may be gathered after generation ..." and col. 11:30-35 "... produce multiple test cases ...");

means for providing a plurality of software verification tools each of the plurality of software verification tools corresponding to a respective lifecycle phase of the computer software (col. 4:55-65 "... each test may be generated in one or more blocks corresponding to one or more parts of the application to be tested ..." and col. 6: 52-60 "... tests 302 generated may include test code that may be inserted ..." and col. 9: 45-55 "... test may be executed to assess the operation and function of the application to be tested ..." and e.g. FIG. 4, step 408 and related text);

means for analyzing the known error in the computer software to determine what phase of the lifecycle the error was introduced (e.g. FIG. 6, 603 and related text); and

means for customizing a verification scope of one or more of the plurality of verification tools that correspond to the lifecycle phase that the known error was introduced (e.g. FIG. 3, Configurations 303 and related text).

Per claim 46

Jorapur discloses:

The system of claim 45 further comprising means for executing the plurality of software verification tools to verify the known error is detected in computer software (col. 4:55-65 "... each test may be generated in one or more blocks corresponding to one or more parts of the application to be tested ... " and col. 6: 52-60 "... tests 302 generated may include test code that may be inserted ..." and col. 9: 45-55 "... test may be executed to assess the operation and function of the application to be tested ..." and e.g. FIG. 4, step 408 and related text).

Per claim 47

Jorapur discloses:

The system of claim 46 further comprising means for customizing the verification scope of one or more of the plurality of verification tools for a second time, if the known error is not detected by executing the plurality of software verification tools (col. 4:55-65 "... each test may be generated in one or more blocks corresponding to one or more parts of the application to be tested ... " and col. 6: 52-60 "... tests 302 generated may include test code that may be inserted ..." and col. 9: 45-55 "... test may be executed to assess the operation and function of the application to be tested ..." and e.g. FIG. 4, step 408 and related text).

Per claim 48

Jorapur discloses:

The system of claim 45 further comprising means for executing the plurality of software verification tools periodically to prevent the known error from re-occurring when the computer software is modified (e.g. FIG. 4 and related text).

*Claim Rejections - 35 USC § 103*

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 6, 19 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jorapur (US 7,299,382 B2) in view of Man et al. (US 6,625,760 B1).

Per claim 6 (Currently Amended)

Jorapur discloses:

The method of claim 1, further comprising formulating the verification results in a confidence factor represented by the equation:  $C = p/t \times 100$ , where p is number of successful test cases and t is total number of test cases.

Jorapur does not explicitly disclose formulating the verification results in a confidence factor represented by the equation above. However, Man discloses a significant test case is one which has a high potential to uncover the presence of an error. Thus, successful execution of a significant test cases increases the programmer's confidence of the correctness of the program (emphasis supplied). Therefore it would have been obvious to one ordinary skilled in the art at the time the invention was made to formulate the verification results in a ratio of number of successful test cases and total number of test cases to run a large number of test cases, a number of significant test cases that are representative of all the possible test conditions so that one can then rely more on the super set of another significant test set. On the other hand, since testing is costly in both man-hours and machine-time, it is the object of the programmer to limit the number of possible experiments such as the above ratio as suggested by Man once in col. 1:55-67).

Per claim 19

This is the system version of the claimed method discussed above (Claim 6), wherein all claim limitations have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also obvious.

Per claim 31

This is another method version of the claimed method discussed above (Claim 6), wherein all claim limitations have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also obvious.

***Response to Arguments***

10. Applicant's arguments with respect to claims 1-31 and 43-48 have been considered but are moot in view of the new ground(s) of rejection. See Jorapur art made of record.

***Conclusion***

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Isaac T. Tecklu whose telephone number is (571) 272-7957. The examiner can normally be reached on M-TH 9:300A - 8:00P.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached on (571) 272-3695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Isaac Tecklu  
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**TUAN DAM**  
**SUPERVISORY PATENT EXAMINER**